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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/760,583

01/16/2001

Wilhelmus Diepstraten

21-10-8

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7590

03/28/2005

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EXAMINER

NG, CHRISTINE Y

ART UNIT

PAPER NUMBER

2663

DATE MAILED: 03/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/760,583

Applicant(s)

DIEPSTRATEN ET AL.

Examiner

Christine Ng

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-22, 27-33, 38-40 and 43 is/are rejected.
- 7) ☒ Claim(s) 23-26, 34-37, 41, 42 and 44 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,696,903 to Mahany.

Referring to claim 16, Mahany discloses an automated method for communicating packets of data with predetermined packet sizes (256 bytes; Column 19, lines 1-4) over a communication channel from a transmitter (Figure 1c, MCD or P) to a receiver (Figure 1c, another MCD or P), the automated method comprising:

(a) characterizing initial interference (mutipath and dispersion issues, link bit error rate, expected duration or frequency of interference bursts) in the communication channel. Refer to Column 22, lines 36-37 and Column 25, lines 28-31.

(b) selecting a first maximum frame transmission time (maximum transmission duration) based on the characterized initial interference. The maximum transmission duration is chosen based on link bit error rate and expected duration or frequency of interference bursts. Refer to Column 25, lines 24-33.

(c) selecting a first data rate (high or low data rate) and a first frame size (fragment length) for a first packet based on the first maximum frame transmission time. Refer to Column 19, lines 1-8; Column 22, lines 40-65; and Column 25, lines 24-33.

(d) fragmenting the first packet into one or more frames based on the first frame size (fragment length). Refer to Column 19, lines 1-9.

(e) Transmitting the one or more frames of the first packet at the first data rate (high or low data rate), such that transmission duration of each frame of the first packet is less than the first maximum frame transmission time. Refer to Column 22, lines 40-65 and Column 25, lines 24-33. Mahany does not specifically disclose that the transmission duration of each frame of the first packet is less than the first maximum frame transmission time. However, since the maximum frame transmission time is the 'maximum' time for frame transmission, it is required that the transmission duration of each frame will be less than the maximum frame transmission time.

Mahany et al do not specifically disclose steps (f) – (j), where steps (a) – (e) are repeated for a second data packet.

However, Mahany discloses that the network switches between two or more data rates depending on channel conditions for different packets. Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to include steps (f) – (j), where steps (a) – (e) are repeated for a second data packet, the motivation being that a network transmits several data packets and the channel conditions are constantly changing. Since channel conditions are changing, it is necessary to characterize subsequent interference in the communication channel in order to transmit the second packet. The second maximum frame transmission time will also be different from the first maximum frame transmission time since channel

conditions would have changed, and the maximum frame transmission times depend on channel conditions.

Referring to claim 17, Mahany does not specifically disclose at least one of (i) the second data rate is different from the first data rate and (ii) the second frame size is different from the first frame size.

However, the second data rate will be different from the first data rate and the second frame size will be different from the first frame size if channel conditions change. Since the data rate and frame size depend on levels of interference, if the level of interference changes between consecutive packets, the data rate and frame size between the consecutive packets will necessarily change too. Refer to Column 22, lines 40-65 and Column 25, lines 24-33. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include at least one of (i) the second data rate is different from the first data rate and (ii) the second frame size is different from the first frame size, the motivation being to allow for changes in channel conditions between consecutive packets.

Referring to claim 18, Mahany does not specifically disclose that the second data rate is the same as the first data rate.

However, the second data rate will be the same as the first data rate if channel conditions remain the same. Since the data rate depends on levels of interference, if the level of interference does not change between consecutive packets, the data rate between the consecutive packets will not change either. Also, data rate depends on what type of packet is being sent. If the same type of packet is being sent

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consecutively, data rate will not change either. Refer to Column 22, lines 40-65 and Column 25, lines 24-33. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the second data rate is the same as the first data rate, the motivation being to allow for consistent channel conditions.

Referring to claim 19, Mahany does not specifically disclose that the second frame size is the same as the first frame size.

However, the second frame size will be the same as the first frame size if channel conditions remain the same. Since the frame size depends on levels of interference, if the level of interference does not change between consecutive packets, the frame size between the consecutive packets will not change either. Refer to Column 22, lines 40-65 and Column 25, lines 24-33. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the second frame size is the same as the first frame size, the motivation being to allow for consistent channel conditions.

Referring to claim 20, Mahany does not specifically disclose that (i) the second rate is different from the first data rate and (ii) the second first size is different from the first frame size. Refer to the rejection of claim 17.

3. Claims 21, 22, 27-33, 38-40 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,696,903 to Mahany in view of U.S. Publication No. 2002/0097684 to Das et al.

Referring to claims 21 and 32, Mahany et al do not disclose that step (c)

comprises selecting the first data rate and the first frame size from a first table of two or more combinations of data rates and frame sizes corresponding to the first maximum frame transmission time; and step (h) comprises selecting the second data rate and the second frame size from a second table of two or more combinations of data rates and frame sizes corresponding to the second maximum frame transmission time, wherein the first table is different from the second table.

Das et al disclose selecting a first data rate (Kb/s) and a first frame size (7680, 3072, 1536 or 768 bits) from a first table (any of columns 2-5 of Table 1) of two or more combinations of data rates and frame sizes. Depending on the size of the next packet, Das et al also disclose selecting a second data rate (Kb/s) and a second frame size (7680, 3072, 1536 or 768 bits) from a second table (another of columns 2-5 of Table 1) of two or more combinations of data rates and frame sizes. Each table (columns 2-5 of Table 1) is different from one another and is stored in the base station. Although each table does not specifically correspond to their respective maximum frame transmission times, each data rate is chosen based on the data rate indicated in the data rate messages (column 1 of Table 1). Refer to Sections 0015-0017. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that selecting the first data rate and the first frame size from a first table of two or more combinations of data rates and frame sizes corresponding to the first maximum frame transmission time; and selecting the second data rate and the second frame size from a second table of two or more combinations of data rates and frame sizes corresponding to the second maximum frame transmission time, wherein the first

table is different from the second table. One would be motivated to do this in order to determine the appropriate data rate and frame size combination to transmit data based on changing channel conditions.

Referring to claims 22 and 33, Mahany does not specifically disclose that the first table corresponds to the characterized initial interference and that the second table corresponds to the characterized subsequent interference.

However, since the first/second data rate and the first/second frame size is chosen based on the first/second table, which is chosen based on the first/second maximum frame transmission time, it would be obvious to one of ordinary skill in the art at the time the invention was made to include that the first table corresponds to the characterized initial interference and that the second table corresponds to the characterized subsequent interference. Each measurement of the channel interference affects the maximum frame transmission time for a certain packet.

Referring to claim 27, Mahany discloses a transmitter (Figure 1c, MCD or P) for communicating packets of data with predetermined packet sizes (256 bytes) over a communication channel to a receiver (Figure 1c, another MCD or P). Refer to the rejection of claim 16.

Mahany does not disclose that the transmitter comprises a processor and a memory connected to the processor and adapted to store different combinations of data rates and frame sizes.

Das et al disclose that a base station utilizes a memory (Table 1) used in selecting a new data rate based on the data rate indicated by the receiver and size of

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encoder packet. Table 1 comprises different combinations of data rates (Kb/s) and frame sizes (7680, 3072, 1536, 768 bits). Refer to Sections 0015-0017. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the transmitter comprises a processor and a memory connected to the processor and adapted to store different combinations of data rates and frame sizes, the motivation being so that the transmitter can quickly access a certain data rate and frame size combination during data rate negotiation.

Referring to claim 28, refer to the rejection of claim 17.

Referring to claim 29, refer to the rejection of claim 18.

Referring to claim 30, refer to the rejection of claim 19.

Referring to claim 31, refer to the rejection of claim 20.

Referring to claim 38, refer to the rejection of claim 16, claims 21 and 32, and claim 27.

Referring to claim 39, Mahany does not disclose that the first table further comprises a second combination of a second data rate and a second frame size; the first data rate is different from the second data rate; and the first frame size is the same as the second frame size.

Das et al discloses that the first table (any of columns 2-5 of Table 1) comprises a second combination of a second data rate (Kb/s) and a second frame size; the first data rate is different from the second data rate; and the first frame size is the same as the second frame size. Each column of Table 1 corresponds to different available data rates for packets of the same frame size. Therefore, it would have been obvious to one

of ordinary skill in the art at the time the invention was made to include that the first table further comprises a second combination of a second data rate and a second frame size; the first data rate is different from the second data rate; and the first frame size is the same as the second frame size, the motivation being so that the transmitter can choose another data rate for the same frame size, in case channel conditions change.

Referring to claim 40, refer to the rejection of claim 16, claim 39, and claim 27.

Referring to claim 43, refer to the rejection of claim 16, claims 21 and 32, and claim 27.

Allowable Subject Matter

4. Claims 23-26, 34-37, 41, 42 and 44 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

5. Applicant's arguments filed December 27, 2004 have been fully considered but they are not persuasive.

Referring to the argument that the invention of Mahany is not automated (page 10, lines 18-43), Mahany discloses that the network can "adaptively switch between two or more data rates" (Column 22, lines 36-39). An adaptive network can automatically switch between data rates depending on channel conditions. Also, Mahany states that the maximum transmission duration "can be reduced to compensate for link bit error rate characteristics or expected duration or frequency of interference bursts" (Column 25, lines 28-31). The maximum transmission duration can therefore be

based on just the link bit error rate characteristics, which can be automated, unlike the expected frequency of interference bursts.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

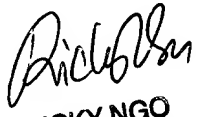
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Ng whose telephone number is (571) 272-3124. The examiner can normally be reached on M-F; 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C. Ng (A)
March 17, 2005


RICKY NGO
PRIMARY EXAMINER

3/18/05